Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Proceedings of the American Academy of Arts and Sciences.

VOL. XLI. No. 33. — MAY, 1906.

CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY OF THE MUSEUM OF COMPARATIVE ZOÖLOGY AT HARVARD COLLEGE. E. L. MARK, DIRECTOR. — No. 177.

THE EFFECTS OF INBREEDING, CROSS-BREEDING, AND SELECTION UPON THE FERTILITY AND VARIABILITY OF DROSOPHILA.

BY W. E. CASTLE, F. W. CARPENTER, A. H. CLARK, S. O. MAST, AND W. M. BARROWS.

(Continued from page 3 of Cover.)

VOLUME 41.

1. RICHARDS, T. W. — (1.) Two New Methods of Avoiding Error in Calorimetry; (2.) RICHARDS, T. W., and FORBES, G. S. — The Constancy of Results obtained by one of the New Methods; (3.) RICHARDS, T. W., and HENDERSON, L. J. — The Comparison of the Two Methods, and the Exact Estimation of Adiabatic Rise of Temperature. pp. 1–19. May, 1905. 30c.
2. HALL, E. H., and Messrs. CHURCHILL, CAMPBELL, and SERVISS. — Measurement of Various Thermal and Electrical Effects, especially the Thomson Effect, in Soft Iron. pp. 21–55. May, 1905. 40c.
3. TABER, H. — The Scalar Functions of Hypercomplex Numbers. pp. 57–70. June, 1905. 20c.
4. BAXTER, G. P. — A Revision of the Atomic Weight of Iodine. Second Paper. pp. 71–85. June, 1905. 25c.
5. MABERY, C. F. — On the Composition of Petroleum. — C. F. MABERY and W. O. QUAYLE. — The Sulphur Compounds and Unsaturated Hydrocarbons in Canadian Petroleum. pp. 87–113. June, 1905. 30c.
6. RICHARDS, T. W., and MARK, K. L. — Thermal Expansion of Hydrogen and Carbon Dioxide under Constant Pressure. pp. 115–140. June, 1905. 30c.
7. JONES, W. W. — A Revision of the Genus Zexmenia. pp. 141–167. June, 1905. 30c.
8. BRACKETT, H. D. — Temporal Clauses in Herodotus. pp. 169–232. July, 1905. 90c.
9. GREENMAN, J. M. — (I.) Descriptions of Spermatophytes from the Southwestern United States, Mexico, and Central America; (II.) ROBINSON, B. L. — Diagnoses and Notes Relating to American Eupatorieae. pp. 233–278. July, 1905. 45c.
10. KENT, N. A. — The Relative Positions of the Arc and Spark Lines of the Spectra of Titanium, Zinc, and Iron. pp. 279–300. 1 pl. 40c.
11. THAXTER, R. — Preliminary Diagnoses of New Species of Laboulbeniaceæ. — VI. pp. 301–318. July, 1905. 20c.
12. MORLEY, E. W., and MILLER, D. C. — Report of an Experiment to Detect the Fitzgerald-Lorentz Effect. pp. 319–327. 2 pls. August, 1905. 20c.
13. BLACKMAN, M. W. — The Spermatogenesis of the Myriapods. (IV.) On the Karyosphere and Nucleolus in the Spermatocytes of Scolopendra Subspinipes. pp. 329–344. 1 pl. September, 1905. 25c.
14. ROTCH, A. L. — On the First Observations with Registration Balloons in America. pp. 345–350. December, 1905. 10c.
15. HAY, G. — On a Postulate respecting a Certain Form of Deviation from the Straight Line in a Plane. pp. 351–357. December, 1905. 10c.
16. CLARK, A. L. — Surface Tension at the Interface between Certain Liquids and Vapors. pp. 359–381. January, 1906. 35c.
17. MCKAY, T. C. — Titles of Articles on the Hall Effect, with the Titles of Some Articles on the Related Phenomena since Discovered by Other Investigators. pp. 383–395. January, 1906. 15c.
18. LEWIS, G. N., and JACKSON, R. F. — Galvanic Polarization on a Mercury Cathode. pp. 397–415. January, 1906. 25c.
19. LEWIS, G. N., and WHEELER, P. — The Electrical Conductivity of Solutions in Liquid Iodine. pp. 417–432. January, 1906. 25c.
20. RICHARDS, T. W., and WELLS, R. C. — The Transition Temperature of Sodic Bromide. A New Fixed Point in Thermometry. pp. 433–448. February, 1906. 20c.
21. RICHARDS, T. W., and JACKSON, F. G. — A New Method of Standardizing Thermometers below 0° *C.* pp. 449–454. February, 1906. 10c.
22. LAWS, F. A., with BISHOP, F. L., and MCJUNKIN, P. — A Method of Determining Thermal Conductivity. pp. 455–464. February, 1906. 15c.
23. MORGAN, M. H. — On the Language of Vitruvius. pp. 465–502. February, 1906. 40c.
24. PEIRCE, B. O. — On the Manner of Growth of a Current in the Coil of a Nearly-closed Electromagnet as Influenced by the Width of the Air Gap. pp. 503–540. February, 1906. 60c.
25. HALL, E. H., with CAMPBELL, L. L., and SERVISS, S. B. — On Thermo-Electric Heterogeneity in Certain Alloys, especially German-Silver. pp. 541–574. March, 1906. 40c.
26. BÔCHER, M. — On Harmonic Functions in Two Dimensions. pp. 575–583. March, 1906. 15c.
27. MORSE, H. W. — Studies on Fluorite. (I.) The Fluorescence of Fluorite; (II.) The Thermo-Luminescence of Fluorite; (III.) Gaseous and Liquid Inclusions in Fluorspar. pp. 585–613. 4 pls. March, 1906. 50c.
28. BRIDGMAN, P. W. — The Electrostatic Field Surrounding Two Special Columnar Elements. pp. 615–626. March, 1906. 20c.
29. TROWBRIDGE, J. — Electric Discharges. (I.) Slow Moving Electrical Luminous Effects; (II.) Magnetic Field and Electric Discharges. pp. 627–644. 4 pls. March, 1906. 40c.
30. BLACKWELL, H. L. — Dispersion in Electric Double Refraction. pp. 645–668. 1 pl. May, 1906. 40c.
31. BISHOP, F. L. — The Thermal Conductivity of Lead. pp. 669–689. May, 1906. 30c.
32. DAVIS, H. N. — The Longitudinal Vibrations of a Rubbed String. pp. 691–727. 3 pls. May, 1906. 75c.
33. CASTLE, W. E., CARPENTER, F. W., CLARK, A. H., MAST, S. O., and BARROWS, W. M. — The Effects of Inbreeding, Cross-Breeding, and Selection upon the Fertility and Variability of Drosophila. pp. 729–786. May, 1906. 85c.

Proceedings of the American Academy of Arts and Sciences.

VOL. XLI. No. 33. — MAY, 1906.

CONTRIBUTIONS FROM THE ZOÖLOGICAL LABORATORY OF THE MUSEUM OF COMPARATIVE ZOÖLOGY AT HARVARD COLLEGE. E. L. MARK, DIRECTOR. — No. 177.

THE EFFECTS OF INBREEDING, CROSS-BREEDING, AND SELECTION UPON THE FERTILITY AND VARIABILITY OF DROSOPHILA.

BY W. E. CASTLE, F. W. CARPENTER, A. H. CLARK, S. O. MAST, AND W. M. BARROWS.